1. Identification

Product Name : ES3 ink Cyan
Order No. : SPC-0440C
General Use : Ink for ink jet plotter
Product Description : Solvent pigment ink
SDS Number : 037-S040315

Manufacture

Company Name : Mimaki Engineering Co., Ltd.
Address : 2182-3 Shigeno-otsu, Tomi-shi, Nagano 389-0512 JAPAN
Telephone No. : +81-268-64-2413

Importer / Distributor Established in USA

Company Name : MIMAKI USA, INC.
Address : 150 Satellite Boulevard, suite A, Suwanee, Georgia 30024, U.S.A.
Telephone No. : +1-678-730-0100
Emergency Telephone No. : +81-268-64-2281

2. Hazards Identification

[GHS Classification]

Physical Hazards

Flammable Liquids : Category 4

Health Hazards

Acute Toxicity – Oral : Not classified
Acute Toxicity – Dermal : Not classified
Acute Toxicity – Inhalation : Not classified
Skin Corrosion / Irritation : Category 2
Eye Damage / Irritation : Category 2
Sensitization – Respiratory : Not classified
Sensitization – Skin : Not classified
Germ Cell Mutagenicity : Not classified
Carcinogenicity : Not classified
Toxic to Reproduction : Category 1
Specific Target Organ Toxicity : Category 2 (central nerve)
(Single Exposure)
Safety Data Sheets

Specific Target Organ Toxicity (Repeated Exposure): Not classified
Aspiration Hazard: Not classified

Environmental Hazards
Hazardous to the Aquatic: Not classified
Environment · Acute Hazard
Hazardous to the Aquatic: Not classified
Environment · Long Term Hazard
Hazardous to the Ozone Layer: Not classified

The above list does not include category being non-classifiable or not-applicable.

[GHS Label Elements]
Symbol

Signal Word
Danger

Hazard Statements
H227 Combustible liquid
H315 Causes skin irritation
H319 Causes serious eye irritation
H360 May damage fertility or the unborn child
H371 May cause damage to organs (central nerve)

Precautionary Statements
[Prevention]
P201 Obtain SDS (Safety Data Sheet) and printer's operation manual before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from open flames and other ignition sources. No smoking.
P260 Do not breathe gas/mist.
P264 Wash hands and eyes thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ eye protection/ face protection.

[Response]
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do.
Continue rinsing.
P308+P311 If exposed or concerned: Call a POISON CENTER/ doctor.
P321 Specific treatment (see 4-Response on our website/SDS URL)
Safety Data Sheets

www.mimaki.co.jp/msds).
P332+P337+P364 Take off contaminated clothing and wash it before reuse.
P370+P378 In case of fire: Use alcohol-resistant-related fire foam, dry chemical, carbon
dioxide, water spray, dry sand for extinguish.

Storage
P403 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal
P501 Dispose of contents/container in accordance with local/regional/national/
international regulation (to be specified).

HMIS Rating (scale 0 – 4)          NFPA Rating (scale 0 – 4)
Health = 3                        Health = 3
Flammability= 2                   Flammability = 2
Reactivity = 0                    Instability = 0
Protective Equipment = -

CANADIAN WHMIS SYMBOLS : Not applicable

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>No</th>
<th>Chemical Name</th>
<th>Wt%</th>
<th>CAS No.</th>
<th>Chemical Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diethylene Glycol Diethyl ether</td>
<td>55-65</td>
<td>112-36-7</td>
<td>C₈H₁₈O₃</td>
</tr>
<tr>
<td>2</td>
<td>Tetraethylene Glycol Dimethyl Ether</td>
<td>10-20</td>
<td>143-24-8</td>
<td>C₁₀H₂₂O₅</td>
</tr>
<tr>
<td>3</td>
<td>γ -Butyrolactone</td>
<td>&lt;20</td>
<td>96-48-0</td>
<td>C₄H₆O₂</td>
</tr>
<tr>
<td>4</td>
<td>Proprietary organic materials</td>
<td>1-10</td>
<td>Trade Secret</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Tetraethylene Glycol Monobutyl Ether</td>
<td>1-5</td>
<td>1559-34-8</td>
<td>C₁₂H₂₆O₆</td>
</tr>
<tr>
<td>6</td>
<td>Colorants</td>
<td>1-5</td>
<td>Trade Secret</td>
<td>-</td>
</tr>
</tbody>
</table>
4. First Aid Measures

Inhalation: IF exposed or concerned: Get medical advice/attention. Remove subject to ventilated fresh air. If not breathing, give artificial respiration right away. If breathing is difficult, give oxygen.

Eye Contact: Immediately flush with room temperature, low pressure and clean water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if eye irritation continues. If eye irritation persists, Get medical advice/attention.

Skin Contact: IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.

Ingestion: IF exposed or concerned: Call a POISON CENTER/doctor.

IF SWALLOWED: Do not induce vomiting.

Most important symptoms and effects, both acute and delayed:

- Skin: Ink contact with skin may cause irritation, swelling or redness.

Note To Physician: Not necessary

5. Fire Fighting Measures


Flash point: about 71℃ (Closed cup)

Autoflammability: None

Explosive properties: 1.4~6.9/v% as dipropylene glycol mono-methyl ether

Extinguishing Media: Water spray, dry chemical, carbon dioxide or, alcohol foam

Unsuitable Extinguishing Media: None

Fire Fighting Instructions: Extinguish to use fire fighting media or plentiful fog water.

Put protection wear without fail in case of firefighting work.

Wear full firefighting turn-out gear (full bunker gear) and respiratory protection (self-contained breathing apparatus).

Do not work in the leeward.
6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel: Eye or Skin protection required during clean-up. Use proper ventilation.
- For emergency responders: None

Environmental precautions: Do not release to sewer, surface or ground water.

Methods and material for containment and cleaning up

- Advice on how to contain a spill: Use sponges to wipe-up ink.
- Advice how to clean-up a spill: Rinse area with damp cloth. Place waste in closed container for disposal. Wash hands with soap and water.
- Any other information: Do not dispose of waste to the sewer.
- Reference to other sections: Please refer SECTION 13 for disposal.

7. Handling and Storage

Handling: Obtain SDS (Safety Data Sheet) and printer's manual instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective equipment (see 8-section). Use proper ventilation and no fire in work place. Keep out of reach of children and do not drink ink. Do not dismantle cartridge. Make sure cartridge is dry before insertion into printer housing. Avoid contact with skin, eyes or clothing. In the case of skin contact, wash with soap and water.

Storage: Store locked up. Do not store the cartridge in high or freezing temperatures. Keep cartridge out of direct sunlight. Do not store the cartridge with oxidizing agents or explosives.

SPECIFIC USES: Not specified
Safety Data Sheets

8. Exposure Controls / Personal Protection

Exposure Limit Values

<table>
<thead>
<tr>
<th>No</th>
<th>Chemical Name</th>
<th>The 8-Hour TWA Exposure Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diethylene glycol diethyl ether</td>
<td>California OELs</td>
</tr>
<tr>
<td></td>
<td>(CAS No. 112-36-7)</td>
<td>5 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33 mg/m³</td>
</tr>
</tbody>
</table>

California OELs: California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Exposure Controls

Occupational Exposure Controls

Engineering Controls: Use exhaust ventilation to avoid from exposure.

Personal Protection

Respiratory Protection: An air purifying respirator with organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or in any other circumstances where air-purifying respirators may not provide adequate protection.

Hand Protection: Wear gloves that resist organic solvents and chemicals.

Eye Protection: Wear coverall, chemical goggles and face shield when handling.

Skin Protection: To prevent any contact, wear impervious clothing such as gloves, apron, boots, or whole body suits made from neoprene, as appropriate.

Environmental Exposure Controls: Not available
9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: Cyan</td>
</tr>
<tr>
<td>Odor</td>
<td>Slightly</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point / Boiling Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point / Melting Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>about 71°C (Closed cup)</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Explosive limits: 1.4~6.9v/v% as γ-Butyrolactone</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (ies)</td>
<td>Soluble</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Greater than 1 (air = 1)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>VOC</td>
<td>740.9 g/L</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to Avoid</td>
<td>High and freezing temperatures</td>
</tr>
<tr>
<td>Stability</td>
<td>Stable under normal temperature</td>
</tr>
<tr>
<td>Materials to Avoid</td>
<td>Oxidizers and explosives</td>
</tr>
<tr>
<td>Hazardous Reactions / Decomposition Products</td>
<td>To burn this product may be produce toxic gases.</td>
</tr>
</tbody>
</table>

11. Toxicological Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Oral LD₅₀: &gt;2500mg/kg(rats) Dermal LD₅₀: &gt;2000mg/kg(rats)</td>
</tr>
<tr>
<td>Eye Irritation</td>
<td>Mild irritant. (rabbit, OECD 405)</td>
</tr>
<tr>
<td></td>
<td>Diethylene Glycol Diethyl ether: Category 2A (GHS Classification)</td>
</tr>
<tr>
<td></td>
<td>γ-Butyrolactone: Category 2A (GHS Classification)</td>
</tr>
<tr>
<td>Skin Irritation</td>
<td>Mild irritant. (rabbit, OECD 404)</td>
</tr>
</tbody>
</table>
Diethylene Glycol Diethyl ether : Category 2 (GHS Classification)

**Skin Sensitization** : Non-sensitizer(LLNA, OECD 429)

**Mutagenicity** : Negative (by Ames Test)

**Carcinogenicity** : Not meet the criteria for classification according to EU Directive 1999/45/EC

Not contain any substances listed in IARC Monographs (1,2A and 2B)

**Reproductive Toxicity** : Tetraethylene Glycol Dimethyl Ether : Category 1B

(GHS Classification)

**Specific Target Organ Toxicity (Single Exposure)**

- γ-Butyrolactone : Category 2 (central nerve) (GHS Classification)
  - Category 3 (drowsiness or dizziness)
  - (GHS Classification)

### 12. Ecological Information

Handling is noted because it might influence the environment when leaking and abandoning it.

Especially, note that the product doesn't flow directly to ground, the river, and the drain ditch.

**Ecotoxicity** : Not available

**Persistence and Degradability** : Not available

**Bioaccumulative Potential** : Not available

**Results of PBT and vPvB assessment** : Has not carried out PBT and vPvB assessment

**Other Adverse Effects** : Not available

### 13. Disposal Considerations

: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Comply with all USA, national and local regulations.

Do not dump this product into sewers, on the ground or into any body of water.
14. Transport Information

Check a thing without a leak in a container.
Perform prevention of collapse of cargo surely.

Us Department of Transportation (DOT)
Hazardous Materials : Not Applicable
Sea Transport (IMDG)
Class : Not Applicable
Packing Group (PG) : Not Applicable
UN Number : Not Applicable
Proper Shipping Name : Not Applicable
Marine Pollutant : Not Applicable
Air Transport (ICAO/IATA)
Class : Not Applicable
Packing Group(PG) : Not Applicable
UN Number : Not Applicable
Proper Shipping Name : Not Applicable

15. Regulatory Information

TSCA Section 4(a) : Not regulated
Final Test Rules
Regulated
TSCA Section 5
Significant New Use : Ingredient : Diethylene glycol diethyl ether (CAS No. 112-36-7)
Reference: 76FR40850
Rule Regulation
Ingredient : Tetraethylene glycol dimethyl ether (CAS No. 143-24-8)
proposed
Reference: 76FR40850
TSCA Section 8(a) : Not regulated
Preliminary Assessment
Information Rule (PAIR)
TSCA Section 12(b) Ingredient : Diethylene glycol diethyl ether (CAS No. 112-36-7)
One-Time Export Reference: TSCA 5 Proposed SNUR
Notification Regulated Ingredient : Tetraethylene glycol dimethyl ether (CAS No. 143-24-8)
Reference: TSCA 5 Proposed SNUR
Clean Air Act Section : Diethylene glycol diethyl ether (CAS No. 112-36-7)
112, Hazardous Air Pollutants

EPCRA (SARA Title III) Section 313
California Proposition 65
Others

: Diethylene glycol diethyl ether (CAS No. 112-36-7)
: Not regulated
: Please refer to any other federal, state and local regulations.

16. Other Information

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of Mimaki Engineering Corporation.

It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process.

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